

VISN 4 DIABETIC TELERETINAL IMAGING PROGRAM

I. PURPOSE

To establish policy, responsibility, and procedures for the VISN 4 Diabetic Teleretinal Imaging Program.

II. POLICY

The VISN 4 Diabetic Teleretinal Imaging Program utilizes non-mydratic digital retinal cameras integrated with a telemedicine platform that is designed to facilitate access to chronic disease management of eye care for patients with diabetes mellitus. Teleretinal imaging involves the systematic assessment of diabetic eye disease in an “at risk” population. The assessment involves the capturing of adequate retinal images from the targeted population and transmitting them via a secure and reliable telecommunications network. These cameras use Digital Imaging and Communications in Medicine (DICOM) connectivity to interface with CPRS, and are operated by trained certified imagers, to acquire, transmit and store digital retinal images. The images are read by a trained optometrist or ophthalmologist readers using Vista imaging Telereader. Based upon these results, patients are advised on appropriate eye care follow-up. The “At Risk” population are those patients with diabetes mellitus who are risk for development of diabetic retinopathy. (See Attachment A, “Guidelines for Selection”)

III. DEFINITIONS

A. Target Population: Refers to the selected “at risk” population of diabetic patients selected for Teleretinal imaging.

B. Imager: An imager is the person who is taking the retinal photographs. All VISN 4 imagers will be trained and certified through the National VA Teleretinal Training Center in Boston or equivalent.

C. Reader: A trained-optometrist or attending ophthalmologist who evaluates retinal images and makes recommendations regarding eye care. All VISN 4 readers will be trained and certified through the National VA Teleretinal Training Center in Boston or equivalent.

IV. RESPONSIBILITY

A. The VISN 4 Network Director is responsible for facilitating the implementation of the Diabetic Teleretinal Imaging Program throughout the VISN. The program is run under the direction of the VISN CMO and the Network Program Manager for Diabetic Teleretinal Imaging, VISN Clinical Lead for Teleretinal Imaging, Teleretinal Imaging Master Preceptors, and facility POCs, Readers, and Imagers for Teleretinal Imaging.

B. The Teleretinal Facility POC has the administrative responsibility of tracking performance measures, and for reporting - as needed - to the VISN Program Manager for Diabetic Teleretinal Imaging, VISN Clinical Lead for Teleretinal Imaging, and Teleretinal Imaging Master Preceptors.

C. Readers have responsibility to follow the attached guidelines for reading and disposition of images.

D. Imagers have responsibility to adhere to the attached guidelines and clinical duties (Attachment B). Direct supervisors of the imagers have responsibility to adhere to the attached guidelines relative to performance evaluation criteria.

V. PROCEDURES

A. Patient Selection: Patient selection for Diabetic Teleretinal Imaging is based on the Patient Selection Guidelines for Teleretinal Imaging established by the Office of Care Coordination and VISN 4 Diabetic Teleretinal Imaging Program Guidelines for Patient Selection. (See Attachment A-Guidelines for Patient Selection).

B. Pupil Dilation: As needed, local facilities may develop policies for diabetic patient dilation. Selective dilation can be done ONLY in accordance with national Care Coordination Services Dilation Guidelines and VHA Directive 2006-049, "Limitations on the use of unlicensed assistive personnel in administering medication." Additionally, local bylaws may be applied. When dilation is used, the acquired studies are identified as such in the CPRS Teleretinal Consult update. (See Attachment C – Dilation)

C. Reading of Images: Teleretinal readers must be trained and certified for reading by the National Teleretinal Training Center in Boston or as stipulated by the CCSF Conditions of Participation; and the conditions of the Memorandum of Understanding between the Office of Care Coordination, Department of Veterans Affairs Central Office and their VISN. Readers must be attending licensed Optometrists or Ophthalmologists, and not residents in training. (See attachment D-Reading of Images.) Readers must exercise timely and appropriate action on behalf of patient based on consult reports, and act on the report from digital retinal imaging reviewer. All images will be read within three working days of consult receipt and appropriate registration. VISN 4 Teleretinal Imaging Program follows the guidelines and procedures for teleretinal reading released by the VHA National Diabetic

Teleretinal Imaging Program; and uses national standard templates, consult and note titles, and codes per national policy.

D. Deleting of Images: Work station will be configured to delete images after they are saved to VistA Imaging. Images will be deleted from the workstations once the imager has ascertained that the images were saved to VistA Imaging to maintain HIPAA compliance and prevent any malfunctions that could occur when the workstation's hard drive fills with eye images. In addition; for Topcon cameras only, processes should be put in place with the assistance of FITS or Biomed to routinely check for latent images or fragments that may appear in partitions or other locations on the device's local hard drive on a regular basis. (Attachment E)

E. Coordination of Care: Diabetic Teleretinal Imagers are trained to provide a level of care management for patients imaged. Imagers are to provide basic information and education to patients regarding diabetes and eye care and be able to demonstrate normal retinal structures, and abnormal lesions of diabetic retinopathy to patients.

F. Quality Assurance: Teleretinal programs within VISN 4 will participate in any available national monitoring of inter and intra-reader reliability. In addition; the program coordinator maintains workload records for each camera, the results of the periodic patient surveys, and maintains records of image readability by camera/imager and by reader. All VISN 4 Teleretinal Imaging programs are expected to comply with Core and CCSF (Care Coordination Store and Forward) Conditions of Participation outlined by the national office of Care Coordination Services.

G. Performance Measurement and Improvement: The performance measurement system for the Diabetic Teleretinal Imaging Program is to ensure standardization of the process of Diabetic Teleretinal Imaging throughout the Network and nationwide. The VISN 4 Teleretinal scorecard tracks several performance monitors including:

1. Number of patients per site
2. Readability of images
3. Reason for non-readability of images
4. Incidence of retinopathy
5. EPRP data for retinal eye exam
6. Missed opportunities
7. Clinic utilization

H. Program Maintenance, Growth and Expansion: The VISN Telehealth Coordinator/Council will annually review workload from imaging sites, and overall VISN workload by facility to assess need for additional imaging sites; or the need to adjust imaging sites. Based on this review, they will make recommendations to the VISN Leadership regarding the need for individual intervention and/or additional resources. Medical centers are to appoint FTEE to diabetic teleretinal duties.

Minimum pre-requisites for imagers, their position description, and pay grade are to be in accordance with VHA Care Coordination Services guidelines.

I. Competency Assessment of Imagers: Input into the competency and performance evaluation of imagers must include feedback from the readers, and will include the number of patients imaged, readability rates; and may include patient survey information. Competency and performance evaluation must include that the imager follows established policies and procedures of the Diabetic Teleretinal Imaging Program.

J. Duration: This screening program is transactional in nature. Patients found to be free of diabetic retinopathy may defer face-to-face eye examination to an alternate year structure at the discretion of the provider.

K. Billing: Teleretinal Imaging may be billed third-party, but will not have a VA co-pay.

L. Coding: In order to facilitate tracking of workload, all VISN 4 sites will use stopcode 718 and credit pairs 694, 695 and 696; as appropriate, in compliance with VHA Stop Code Directive.

VI. REFERENCES

- A. Teleretinal Imaging home page:
<http://vaww.carecoordination.va.gov/training/boston>
- B. Under Secretary for Health's Information Letter: Request for Proposals (RFP) to Establish Veterans Integrated Service Network Telehealth Programs in Teleretinal Imaging for Diabetic Retinopathy. IL 10-2005-001, January 2005
- C. The National Teleretinal Operations Manual/ Toolkit VA Office of Care Coordination: <http://vaww.carecoordination.va.gov/store-forward/teleretinal/ops-manuals/>
- D. Credentialing and Privileging in Telemedicine:
<http://vaww.carecoordination.va.gov/topics/credential/>
- E. Credentialing and Privileging. VHA Handbook 1100.19, Nov 14, 2008.
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1806
- F. Guidelines for Imager and Reader Duties as found on VA CCS Store and Forward website.
- G. Limitations on the Use of Unlicensed Assistive Personnel in Administering Medication: VHA Directive 2006-049; Sept 12, 2006:
http://vaww1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1482

H. Department of Veterans Affairs, Veterans Health Administration, Veterans Integrated Services Network Office 1, Department of Veterans Affairs, National Diabetic Teleretinal Screening Program, "Teleretinal Workstation Image Deletion," January 2007: <https://vaww.va.gov/occ/Docs/TelretinalDeletingImages.pdf>

I. Validation Studies for Diabetic Teleretinal Imaging: Cavallerano AA, Cavallerano J, Katalinic P, Tolson A, Aiello LP, Aiello LM, and the Joslin Vision network Clinical Team. Use of Validated Joslin Vision Network Digital-Video Non-mydratic Retinal Imaging to Assess Diabetic Retinopathy in a Diabetes Outpatient Intensive Treatment Program. RETINA 2003; 23: 215-223

Cavallerano JD, Katalinic PL, Strong JD, Cavallerano, AA. Role of telemedicine in preserving vision: Challenges and clinical applications. PRACTICAL OPTOMETRY 2002;13:120-126

Bursell S-E, Cavallerano JD, Cavallerano AA, Aiello LP, Aiello LM, Clermont A, Birkmire-Peters D, the Joslin Vision Network Research Team. Stereo Nonmydratic digital-video color retinal imaging compared with early treatment diabetic retinopathy study seven standard field 35-mm stereo color photos for determining level of diabetic retinopathy. OPHTHALMOLOGY 2001;108;572-585

Bursell S-E, Clermont A, Cavallerano J, Cavallerano AA, Aiello LP, Aiello LM. Nonmydratic Digitized Video Retinal Imaging for Diabetic Retinopathy Assessment in a Telemedicine Environment. Diabetes 49:2000;S-A10

Aiello LM, Cavallerano J, Cavallerano AA, Bursell S-E. The Joslin Vision Network (JVN) Innovative Telemedicine Care for Diabetes. OPHTHALMOL CLIN NORTH AM. 13:2000;213-224

Bursell S-E, Clermont A, Cavallerano J, Cavallerano AA, Aiello LP, Aiello LM. Validation of Stereo-Non-mydratic Video Retinal Imaging for Diabetic Retinopathy Assessment in a Telemedicine Environment. IOVS 41:2000;S166.

VII. RESCISSION

None

VIII. REVIEW AND RESPONSIBILITY

The policy will be reviewed by the Network Telehealth Coordinator as standards change, and reissued in compliance with VISN guidelines.

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VISN 4 Network Director

Attachments

VISN 4 DIABETIC TELERETINAL IMAGING PROGRAM GUIDELINES FOR PATIENT SELECTION

The target population should primarily be aimed at diabetic patients falling into one of the categories listed below per Request for Proposals (RFP) 10-2005-001:

- have not had an eye evaluation within the past 1-2 years depending upon the result of previous eye examinations
- have failed to keep VA eye clinic appointments or fail to provide evidence of eye examination by a non-VA optometrist or ophthalmologist so that VHA may meet EPRP performance measures

Clinical Exclusions: clinical exclusions due to need for direct care by an eye care provider include:

- Evidence of prior retinal laser for diabetes
- Monocular status of patients
- Advanced eye disease (any) requiring live care
- Legal blindness

If capacity for Teleretinal imaging is limited, the following prioritization applies

- have Type 2 diabetes or Type 1 diabetes for more than 5 years
- have proteinuria (more than 300 mg/24h), elevated serum creatinine, are dialysis dependent or post transplant
- have poorly controlled blood pressure (e.g. more than 140/90 mm Hg)
- have vision impairment not associated with elevated blood glucose
- pregnant
- have other diabetes-related vascular disease

PROCESS:

a. Primary Care or other health care Providers will determine, based on CPRS eye clinic records or patient eye history documented in CPRS, which patients will need to be imaged according to the guidelines provided above and the Patient Selection Guidelines for Teleretinal Imaging for the Office of Telehealth Services, VA Central Office.

b. Teleretinal Imagers, as capable, may assist the health care providers in determining which patients are in need of retinal examination in the eye clinic or screening via teleretinal imaging.

c. If capacity is limited, patients who meet the designated criterion for teleretinal screening listed above will be given priority ahead of other diabetic patients in the procedure scheduling.

d. Facility and VISN teleretinal leads will monitor patient selection by health care providers and imagers to ensure that the designated target population is given priority if capacity is limited.

e. Individual facility primary care providers have the responsibility to monitor the "diabetic eye exam" clinical reminder and to document in CPRS any outside eye care that is being received. Patients that have already received appropriate eye care and do not have a need to be screened through the teleretinal imaging process will not be referred for screening.

f. Patients may be either scheduled or be seen on a walk-in, on-demand basis as best meets the needs of the local acquisition site.

**VISN 4 DIABETIC TELERETINAL IMAGING PROGRAM
IMAGER DUTIES**

Teleretinal Imagers will function as photographers to acquire digital retinal images of patients as part of the VHA National Diabetic Teleretinal Imaging Program. An example of an Imager Position Description can be found at the following link:

<http://vaww.carecoordination.va.gov/store-forward/teleretinal/docs/OcularImager.pdf>

Teleretinal Imagers will:

1. Complete a formal training and certification program offered by the National VA Teleretinal Training Center in Boston or the equivalent according to the stipulations of the Conditions of Participation and/or Memorandum of Understanding (MOU) between the Office of Care Coordination, Department of Veterans Affairs Central Office and the VISN.
2. Take retinal images and upload them into VistA Imaging in accordance with program requirements and policies and work closely with readers to ensure image quality.
3. Work with primary care to ensure that patients are being appropriately referred to the Teleretinal program.
4. Properly follow-up with the patients on the recommendations of the readers and ensure that readers' recommendations are communicated to the referring doctor or the appropriate primary care provider.
5. Coordinate with the eye care providers to arrange for appropriate follow-up of patients to the clinics.
6. Participate in VISN Teleretinal Conference Calls regarding the program, unless more than one imager exists for a particular station. In this case at least one imager per station will participate in the conference call.
7. Serve as a liaison between image readers, referring providers, eye care providers at acquisition and reading sites, patients and other VA personnel. Function in the role of care coordination helping educate patients and other practitioners while serving as the liaison between acquisition and reading sites.
8. Collect appropriate patient demographic and pertinent historical information to populate the national imager template. Assure compliance with informed consent policies.
9. Provide basic information and education to patients regarding diabetes and eye care and be able to demonstrate normal retinal structures and abnormal lesions of diabetic retinopathy to patients.
10. Exercise timely and appropriate action on behalf of patient, based on consult reports, and act on the report from the digital retinal imaging reviewer. As determined locally, administer topical eye medications under the direct supervision of a licensed independent eye provider (attending optometrist or ophthalmologist) in accordance with the stipulations of VHA Directive 2006-049, "Limitations on the Use of Unlicensed Assistive Personnel in Administering Medication." Additionally, local by-laws and policies may be applied.

PROCESS:

- a. A patient may present to the teleretinal imager by self-referral or by referral from a health care provider who has not ordered, or who does not have the ability to order, a teleretinal screening consult. The imager may also contact patients who have not received diabetic eye care in a VA eye clinic over the previous year, as necessary, to arrange for teleretinal imaging.
- b. The Imager will verify with the patient that (s)he has diabetes.
- c. The Imager may order a teleretinal screening consult through CPRS. The imager will have access to this consult only on the CPRS order screen.
- d. The Imager will perform the screening by acquiring funduscopy photographs per protocol established by the National Teleretinal Training Center in Boston.
- e. The Imager will enter an unsolicited PDX (Patient Data Exchange) when transmitting images and an interfacility consult to a remote reading center to expedite the loading of new patients into the reading center facility's data base.
- f. The Imager will complete CPT coding and ICD-9 coding per national guidelines.
- g. The local Lead Diabetic Teleretinal Imaging Coordinator/POC with the assistance of VISN Telehealth Coordinator and Clinical Lead Teleretinal Imaging is responsible for monitoring this process and policy.
- h. The Lead Diabetic Teleretinal Imaging Coordinator is to ensure that the Teleretinal Imagers receive training and that competency reviews are conducted routinely regarding CPRS ordering, charting, and coding.

VISN 4 DIABETIC TELERETINAL IMAGING PROGRAM GUIDELINES/PROCEDURES FOR DILATION

Unreadable fundus images due to poor image quality or reduced viewable fundus area can result in over referral of diabetic patients for examination in eye clinics. In many cases, pupil dilation will improve the image quality and will increase the viewable retinal area resulting in fewer referrals for eye examinations to local eye clinics. This policy is to establish policy and procedure for the dilation of patients referred to the Teleretinal Program for Diabetic Retinopathy.

PROCESS:

a. Clear fundus photos with a fundus area comprised of the posterior pole including clear views of the disc and macular; as well as, views of the superior temporal and distal posterior retina clearly visible are critical to the success of the VISN 4 Teleretinal Imaging for Diabetic Retinopathy Program. To achieve this criteria pupil dilation may be necessary. Each local facility with input from the local optometry or ophthalmology teleretinal program point of contact will establish policy and procedures for dilation of patients referred to the teleretinal program.

b. Any local dilation policy MUST be in accordance with VHA Directive 2006-049, "Limitations on the Use of Unlicensed Assistive Personnel in Administering Medication." The creation of a local policy will be made with input from the imager, the imager supervisor, and the local optometry and/or ophthalmology point of contact for the Teleretinal Program. If there are no local optometrists or ophthalmologists, then a medical doctor who will be responsible for the medical care and dilation of the patient is to participate in the formation of the local policy along with a VA optometrist or ophthalmologist affiliated with the VA parent station of the local facility. Non-licensed personnel can only dilate after they have received training required by VHA Directive 2006-049 and only under direct supervision of the responsible eye care provider or medical doctor.

c. All patients who are dilated are to be informed of dilation prior to instillation of dilating drops. Patients are to be informed of the benefits and disadvantages of dilation. They are to be informed of any symptoms of negative aspects of dilation.

d. For all patients that are dilated, the imager will mark the Teleretinal Imaging Consult template indicating that the patient was dilated.

e. The local optometry and ophthalmology point of contact for the Teleretinal Program or the local medical doctor who is responsible for dilation will have responsibility to oversee and monitor the use of dilation drops and are responsible for arranging for the management of any potential side-effects.

f. The imager supervisor, with input from appropriate Eye Care staff, is responsible for the implementation and enforcement of local policy.

**VISN 4 DIABETIC TELERETINAL IMAGING PROGRAM
GUIDELINES/PROCEDURES FOR TELERETINAL READING**

- A. Teleretinal readers must be trained and certified for reading by the National Teleretinal Training Center in Boston according to the national OTS Conditions of Participation and/or as stipulated by the conditions of the Memorandum of Understanding between the Office of Telehealth Services, Department of Veterans Affairs Central Office and their VISN. Readers must be attending licensed Optometrists or Ophthalmologists and not residents in training. Teleretinal reading is considered a clinical activity and readers should have dedicated clinic time independent of other clinical or administrative activities.
- B. Readers must be credentialed and privileged at the reading site consistent with facility by-laws at the reading site location. A copy of each reader's privileges will be provided to the acquisition sites.
- C. Readers should utilize the recommended high-resolution 21" reading workstations in a room with adequate control of external light. If a 21" monitor is not available then a monitor with the capability of 1024 X 768 resolution will be used.

PROCESS:

- a. Readers will use the most recent versions available of VISTA Imaging Telereader software for image review and manipulation.
- b. Readers will enter their reading notes and clinical conclusions into CPRS using national standardized templates. Templates may be modified to meet local needs by adding to the template, but not by removing any of the nationally required items and objects.
- c. Encounters will be completed and coded per national policy.
- d. The Network Telehealth Coordinator for VISN 4 Diabetic Teleretinal Imaging Program is responsible for overseeing this process and ensuring compliance with the national guidelines.
- e. The Teleretinal Readers are responsible to evaluate images within 3 working days. Recommendations for follow-up care are reported back to the imager via the consult report. Urgent/emergent findings are reported directly to the imager, primary care provider, or local eye clinic.
- f. Readers will periodically encounter images that are not readable. Since many of the diabetic patients that are referred to the Teleretinal program will be due for their diabetic eye examination and their diabetic retinopathy status remains unknown,

patients with unreadable images will be recommended to be seen by an eye care provider as soon as possible.

g. The Diabetic Teleretinal Imaging Program Imagers will be responsible for following through on the Reader's recommendations with notification of the recommendations being conveyed through CPRS alert to the patient's primary care provider.

**THE VISN 4 DIABETIC TELERETINAL IMAGING PROGRAM
PROCESS OF DELETING EYE IMAGES**

A. The Department of Veterans Affairs National Diabetic Teleretinal Screening Program has incorporated a national policy for the Diabetic Teleretinal Screening workstation configuration. The national policy states that the workstations be configured to delete images after the images are saved to VistA Imaging. Deleting images from the workstations once the Imager has ascertained that the images were saved to VISTA Imaging will prevent any malfunctions that could occur when the workstation's hard drive fills with eye images.

B. Images should remove the images from the Imaging camera and associated equipment once the images that have been placed on VISTA Imaging and confirmed.

PROCESS:

- a. Images should be deleted off of the Retinal Camera and any associated workstations after each patient or at the end of the day.
- b. Once the images have gone to VISTA imaging, delete images from imaging camera by following the Retinal Camera's manufacturer instructions.
- c. The facility Lead Diabetic Teleretinal Imaging Coordinator and Network Telehealth Coordinator for Diabetic Teleretinal Imaging will facilitate, as necessary, communication between the imager and local IRM staff to ensure that the workstations are configured appropriately for the imagers to delete eye images.
- d. Teleretinal Imagers are responsible for conducting a quality assurance check for the image study and verifying that images have completely transferred to VISTA Imaging prior to deleting the images from the Retinal Cameras and any associated workstation.
- e. IRM with assistance from Biomedical Engineering as necessary is responsible for configuring the workstation to delete images.
- f. Processes should be put in place with the assistance of FITS or Biomed to routinely check for latent images or fragments that may appear in partitions or other locations on the devices local hard drive (Topcon camera's only).